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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Valerie Frankard

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DILWORTH & BARRESE, LLP
1000 WOODBURY ROAD
SUITE 405
WOODBURY, NY 11797

EXAMINER

COLLINS, CYNTHIA E

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/584,024	Applicant(s) FRANKARD ET AL.	
	Examiner Cynthia Collins	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 2,3,7-13 and 15-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-6 and 14 is/are rejected.
- 7) ☒ Claim(s) 5 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/16/07</u> . | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

Applicant's election with traverse of Group II, claim(s) 5 and 14, drawn to a method for increasing plant yield, said method comprising introducing into a plant a cyclin A nucleic acid molecule, preferably encoding a cyclin A protein, wherein said cyclin A nucleic acid molecule is operably linked to a seed-preferred promoter, wherein said cyclin A nucleic acid molecule is a cyclin A2, wherein said cyclin A2 comprises a motif consisting of W L V/I E V S/A D/E D/E Y K/R/T L and a motif consisting of E L T L V/I/T/M D/E/M Y T/S/H/P/G F R/L L/R/K/N _F L P S, having at least two of residues (--T F--F---), and to a plant obtainable by said method, in the reply filed on June 14, 2010 is acknowledged. Claim 1 link(s) inventions I-VI. Claim 4 link(s) inventions II-IV. Claim 6 link(s) inventions II-IV.

The traversal is on the ground(s) that the technical feature linking the different groups is the genetic modification of a plant by introduction of a cyclin A for increasing its yield.

This is not found persuasive because “for increasing plant yield” as recited in the preamble of claim 1 is an intended use and thus not limiting. This is also not found persuasive because the genetic modification of a plant by introduction of a cyclin A is obvious or anticipated over INZE et al. (WO 01/85946, 15 November 2001) and HELENTJARIS et al. (WO 00/65040, 02 November 2000), and therefore does not constitute a special technical feature as defined by PCT Rule 13.2, because it does not define a contribution over the prior art.

The requirement is still deemed proper and is therefore made FINAL.

Claims 2-3, 7-13 and 15-20 are withdrawn from consideration as being directed to nonelected inventions.

Specification

The disclosure is objected to because the disclosure does not comply with the requirements of 37 CFR 1.821-1.185, which requires that reference be made to a sequence by use of the sequence identifier, preceded by "SEQ ID NO:" in the text of the description, even if the sequence is also embedded.

In the instant case Figure 3 has embedded sequences. See MPEP 2422.02 which indicates that "... when a sequence is presented in a drawing, regardless of the format or the manner of presentation of that sequence in the drawing, the sequence must still be included in the Sequence Listing and the sequence identifier ("SEQ ID NO:X") must be used, either in the drawing or in the Brief Description of the Drawings."

In the instant case the specification also has embedded sequences, e.g. at pages 6, 7 and 23.

Appropriate correction is required.

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Objections

Claim 5 is objected to because the claims do not comply with the requirements of 37 CFR 1.821-1.185, which requires that reference be made to a sequence by use of the

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sequence identifier, preceded by "SEQ ID NO:" in the text of the description or claims, even if the sequence is also embedded in the text of the description or claims of the patent application. Appropriate correction is required.

Claim 5 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 5 does not further limit claim 4 because claim 5 merely recites characteristics that are inherent to cyclin A2 proteins, for example as set forth in the paragraph spanning pages 6-7 of the specification.

Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 6 does not further limit claim 4 because claim 4 does not encompass all of the species recited in claim 6, since claim 4 is limited to a cyclin A2, selected from cyclin A2;1, cyclin A;2;2, cyclin A2;3 and cyclin A2;4.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 5 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 is indefinite in the recitation of amino acid motifs because the cyclin A2 of claim 4 is a cyclin A2 nucleic acid molecule. It is suggested that the claim be amended to indicate that the cyclin A2 nucleic acid molecule encodes a cyclin A2 protein which comprises the recited motif in order to overcome the rejection.

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 6 is indefinite in the recitation of “said cyclin A”. There is insufficient antecedent basis for this limitation because claim 6 depends from claim 4, which is limited to cyclin A2.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Helentjaris et al. (WO 00/65040, November 2, 2000).

The claims are drawn to a method for increasing plant yield, said method comprising introducing into a plant a cyclin A nucleic acid molecule, wherein said cyclin

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A nucleic acid molecule is operably linked to a seed- preferred promoter, and to a plant obtainable by the method.

Helentjaris et al. teach a method comprising introducing into a plant a cyclin A nucleic acid molecule, wherein said cyclin A nucleic acid molecule is operably linked to a seed- preferred promoter, and a plant obtainable by the method (examples 5,6; SEQ ID NO: 25 & 26). While Helentjaris et al. are silent with respect to whether their method is “for increasing plant yield”, Helentjaris et al. need not explicitly teach this limitation in order to anticipate the rejected claims, because the recitation in the claim preamble is an intended use and thus not limiting.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Helentjaris et al. (WO 00/65040, November 2, 2000) in view of Roudier F. et al. (The Medicago species A2-type cyclin is auxin regulated and involved in meristem formation but dispensable for endoreduplication-associated developmental programs. Plant Physiol. 2003 Mar;131(3):1091-103).

The claims are drawn to a method for increasing plant yield, said method comprising introducing into a plant a cyclin A2 nucleic acid molecule, wherein said cyclin A2 nucleic acid molecule is operably linked to a seed- preferred promoter, and

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wherein said cyclin A nucleic acid molecule is a cyclin A2 selected from cyclin A2;1, cyclin A2;2, cyclin A2;3 and cyclin A2;4.

The teachings of Helentjaris et al. are set forth above.

Helentjaris et al. do not explicitly teach a cyclin A2 nucleic acid molecule having the features recited in the rejected claims.

Roudier F. et al. teach a cyclin A2 nucleic acid molecule having the features recited in the rejected claims, i.e. the cyclin A2 designated cycA2;2 (GenBank Accession No. AAK81695, September 1, 2001, cyclin A2 [*Medicago sativa*]), as well as plants transformed with the nucleic acid molecule operably linked to a 35S promoter (page 1097 Figure 5; page 1098 Figure 6).

Given the teachings of Helentjaris et al. that a cyclin A nucleic acid molecule operably linked to a seed- preferred promoter can be introduced into a plant, and given the teachings of Roudier F. et al. that a cyclin A2;2 nucleic acid molecule operably linked to a 35S promoter can be introduced into a plant, it would have been *prima facie* obvious to one skilled in the art at the time the invention was made to introduce into a plant a cyclin A2;2 nucleic acid molecule operably linked to a seed- preferred promoter. The use of a cyclin A2;2 nucleic acid molecule in combination with a seed- preferred promoter would have been a simple substitution of equivalent elements (a seed-preferred promoter for a 35S promoter and/or a cyclin A2;2 for a cyclin A nucleic acid molecule) to obtain predictable results (a plant into which a cyclin A2;2 nucleic acid molecule operably linked to a seed- preferred promoter has been introduced). Thus, the claimed invention would have been *prima facie* obvious as a whole to one of ordinary skill in the art at the time the invention was made.

Remarks

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (571) 272-0794. The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cynthia Collins/
Primary Examiner, Art Unit 1638

CC